SUICIDE AND SELF-INFLICTED INJURY IN MASSACHUSETTS 1996-1998

Bureau of Health Statistics, Research & Evaluation
Bureau of Family and Community Health
Massachusetts Department of Public Health

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Executive Summary

Suicide is a significant public health problem in Massachusetts, taking an average of almost 500 lives each year. Suicides outnumber motor vehicle-related deaths and are more than twice as frequent as homicides. Males complete suicide more frequently than females, but females are more likely to attempt suicide. Suicide rates are highest for those between ages 30 and 44, and those over age 85. Hospitalizations for self-inflicted injuries are most prevalent for those aged 15 through 44, and 15 to 24 year-olds are most likely to visit an Emergency Department (ED) for a self-inflicted injury. For every 1 suicide, there are 7 hospitalizations and 15 ED visits for self-inflicted injury. The data in this report reflect Massachusetts residents age 10 and over.

The most common methods used to complete suicide were suffocation (including hanging) and firearms, respectively, while poisoning was most often used in nonfatal attempts. Differences among race/ethnic groups were also noted: White non-Hispanics have the highest rates for deaths and ED visits, while Hispanics have the highest hospitalization rate. According to the Massachusetts Youth Risk Behavior Survey (MYRBS), Massachusetts high school students report higher rates of suicidal behavior than the national average.

While the data on suicide and self-inflicted injuries paint a compelling picture, they are not complete. Social stigma, pressure from survivors, and incomplete information about intentionality result in under-reporting of self-inflicted injuries and deaths. Furthermore, data collection systems for nonfatal injury are limited to acute care hospitals; patients treated in psychiatric facilities, Veteran's Administration hospitals, corrections facilities, or by health professionals outside of a hospital setting are excluded.

Suicide can be prevented with a public health approach that includes a four-phase cycle:

1. Surveillance of suicide and suicidal behavior to define the scope of the problem.
2. Risk factor research to identify causes and potential protective factors.
3. Developing and testing new interventions to prevent suicide.
4. Implementing, maintaining, and continually assessing established suicide prevention programs.

Data highlights: Suicide and Self-Inflicted Injury in Massachusetts: 1996-1998			
	Deaths	**Hospitalizations**	**Emergency Department Visits [1]**
Mean Annual Frequency	491	3,466	7,407
Mean Annual Rate	9.1/100,000	64.1/100,000	137/100,000
Most common method	Suffocation (36%)	Poisoning (83%)	Poisoning (67%)
Highest risk group[2]: Sex	Males	Females	Females
Highest risk group: Age	35-44	35-44	15-24
Highest risk group: Race	White, non-Hispanic	Hispanic	White, non-Hispanic

1 Statewide estimates based on pilot study.
2 Highest risk group determined by rate per 100,000.

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Introduction

Suicide is a serious public health problem. In 1998, suicide was the eighth leading cause of death in the United States, resulting in more than 30,000 deaths per year. Many people are surprised to learn that far more Americans die from suicide than from homicide: there were more than 30,000 suicides compared to approximately 18,000 homicides in 1998[1]. According to The Surgeon General's Call to Action to Prevent Suicide, hospitalizations for self-inflicted injuries also exceed those for assault-related injuries in the US, and each year approximately 500,000 people seek emergency department services following a self-inflicted injury. Death from suicide represents an almost unbearable tragedy for millions of Americans who survive the loss of someone close to them, thus putting themselves at risk for suicide.

Surgeon General David Satcher has stated that suicide is a significant public health problem, and suggested that we put into place national strategies to prevent the loss of life and suffering caused by suicide and self-inflicted injury[2].

Suicide

1a. Overview

Suicide data in Massachusetts are obtained from death certificates collected by the Registry of Vital Records and Statistics at the Massachusetts Department of Public Health. Each certificate is assigned a "manner of death," indicating whether the death was unintentional, homicide, or suicide. If the intent of the death is unclear after investigation by the Medical Examiner, the manner of death is recorded as "undetermined." Between 1996 and 1998, 19% of all injury deaths of state residents over age 10 were coded as undetermined, some of which were possibly suicides. Suicides may also be coded as unintentional when there is inadequate information about intentionality. Thus, incomplete circumstantial evidence, as well as social stigma surrounding self-injury lead to an under-reporting of the number of suicide.

1 Murphy, Sherry L., Deaths: final data for 1998, for National vital statistics reports. Hyattsville, Maryland: National Center for Health Statistics; 2000. Vol. 48, No. 11.

2 US Public Health Service, The Surgeon General's Call to Action to Prevent Suicide. Washington, D.C.: 1999.

Table 1. Leading Causes of Injury Death[1] by Intent, Ages 10-65+, Massachusetts, 1996-1998

Unintentional	Suicide	Homicide[3]
M V Traffic[2] 338	Suffocation 177	Firearm 76
Fall 179	Firearm 142	Cut/Pierce 33
Suffocation 76	Poisoning 107	Suffocation 6
Other causes 626	Other causes 65	Other causes 35
TOTAL 1,219	TOTAL 491	TOTAL 150

Data source: MDPH, Registry of Vital Records & Statistics

As in the rest of our nation, suicide is a significant public health problem in Massachusetts. Between 1996 and 1998, suicide took an average of 491 lives per year (Table 1). Suicide is the third overall leading cause of death for young people ages 15-34[4].

Contrary to popular belief, suicide rates in Massachusetts have been at least double homicide rates over the past 50 years (Figure 1). Social standards and coding practices have changed over time, yet suicide rates in Massachusetts have remained relatively stable since the early 1950s (between 7 and 10 per 100,000). Homicide rates have slowly increased from a rate of 1 death per 100,000 in the 1950s to 4 deaths per 100,000 in more recent decades, and now average between 2 and 3 deaths per 100,000. Suicide accounts for more than one-fifth of all injury deaths in Massachusetts (Figure 2) and outnumber motor vehicle-related deaths.

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1 Cause of death: the injury that initiated the events leading to death or the circumstances of the unintentional or intentional injury that resulted in the death. Ranking based on average annual number of deaths 1996-98.

2 Motor vehicle deaths to occupants, pedestrians, motorcyclists and bicyclists.

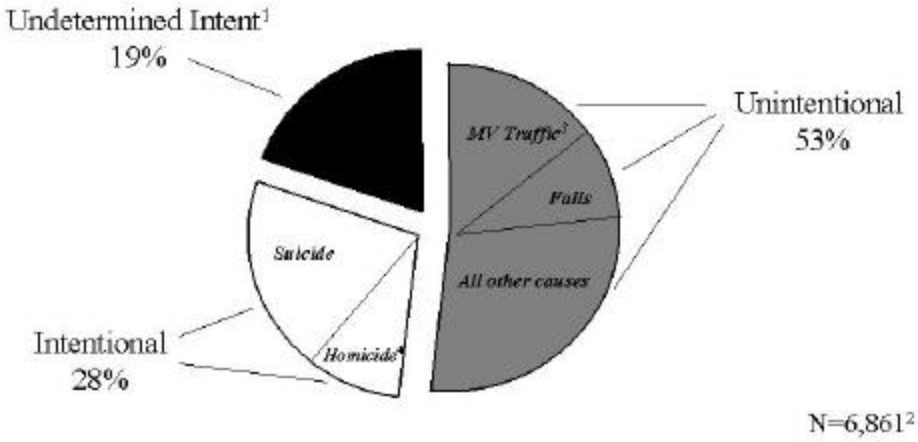
3 Excludes deaths caused by legal intervention.

4 Centers for Disease Control and Prevention, "Ten leading causes of death for Massachusetts, 1997".

Figure 1. Homicide and Suicide Rates, Massachusetts, 1950-1998

Data source: MDPH, Registry of Vital Records & Statistics

Figure 2. Total Injury Deaths by Intent, Ages 10-65+, Massachusetts, 1996-1998



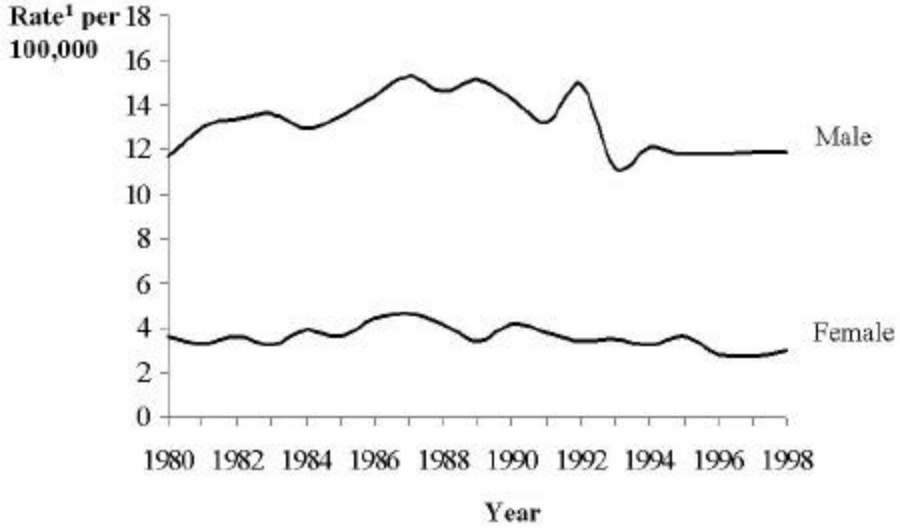
Data source: MDPH, Registry of Vital Records & Statistics

1 Undetermined whether death was intentional or unintentional.
2 Total number of injury deaths, ages 10 and over, 1996-1998.
3 Motor vehicle deaths to occupants, pedestrians, motorcyclists and bicyclists.
4 Excludes deaths caused by legal intervention.

1b. Age and Sex

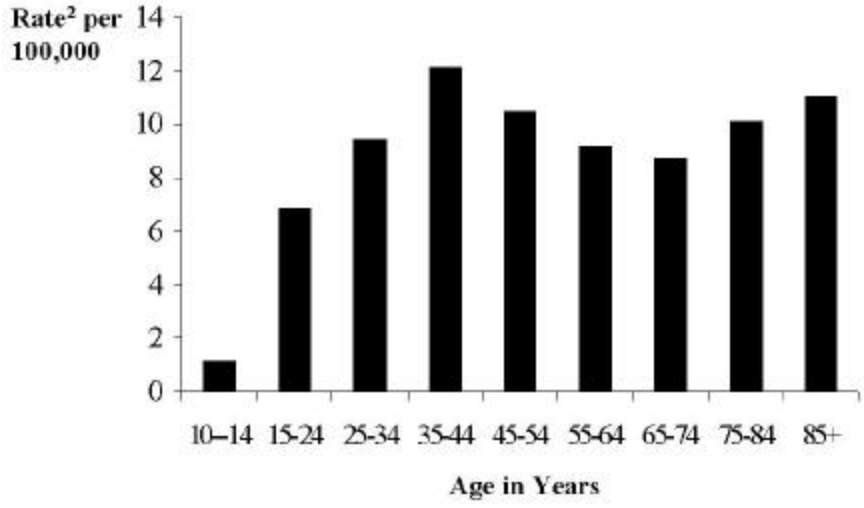
The suicide rate for males is 3 to 4 times greater than that of females (Figure 3). Thus, males largely drive the age pattern of suicide rates, as female rates are substantially lower throughout the life span. Overall, suicide rates are very low for those below age 14 (Figure 4). Youth 15 to 24 years of age are at higher risk, and rates continue to increase before peaking in 35–44 year olds. After age 45, rates generally decline up to age 75 and then steadily rise again in older adults.

Figure 3. Suicide Rate by Sex, Age 10-65+, Massachusetts, 1980-1998



Data source: MDPH, Registry of Vital Records & Statistics

Figure 4. Suicide Rates by Age, Massachusetts 1996-1998

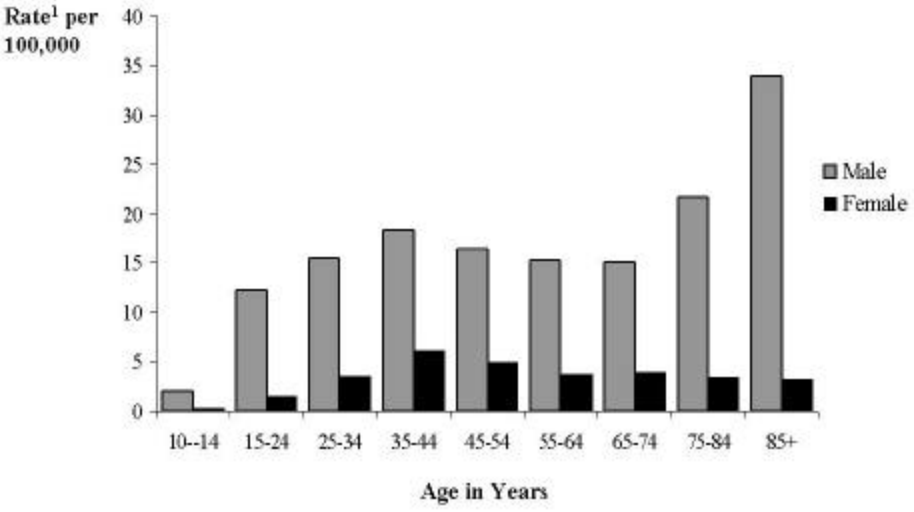


Data source: MDPH, Registry of Vital Records & Statistics

1 Rates are age-adjusted per 100,000 residents.
2 Number of suicide deaths per 100,000 persons in each age group ; average annual rate. N=1,473 suicide deaths from 1996-1998.

When suicide rates are analyzed by age and sex (Figure 5), it shows female rates peaking at mid-life, between the ages of 35 and 44. While males also show an increase in this age group, elderly males over age 85 have the highest rates of all, at over 30 deaths per 100,000.

Figure 5. Suicide Rates by Age and Sex, Massachusetts, 1996-1998

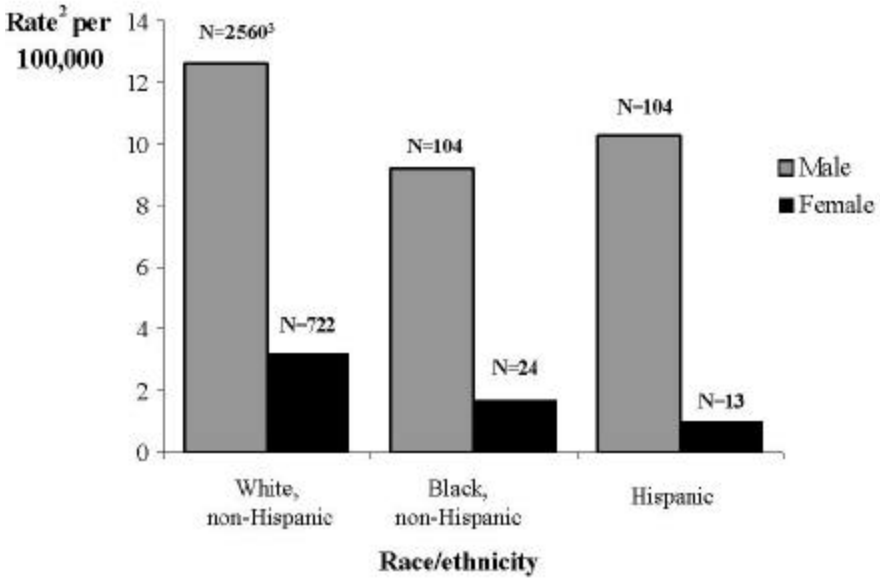


Data source: MDPH, Registry of Vital Records & Statistics

1c. Race and Ethnicity

Suicide rates in Massachusetts are highest among White non-Hispanics for both males and females when compared to Black non-Hispanics and Hispanics (Figure 6). The lowest rate for males was among Black non-Hispanics while the lowest rate for females was among Hispanics. There were too few deaths in other race/ethnic groups to calculate reliable rates.

Figure 6. Suicide Rates by Race/Ethnicity and Sex, Age 10-65+, Massachusetts, 1992-98



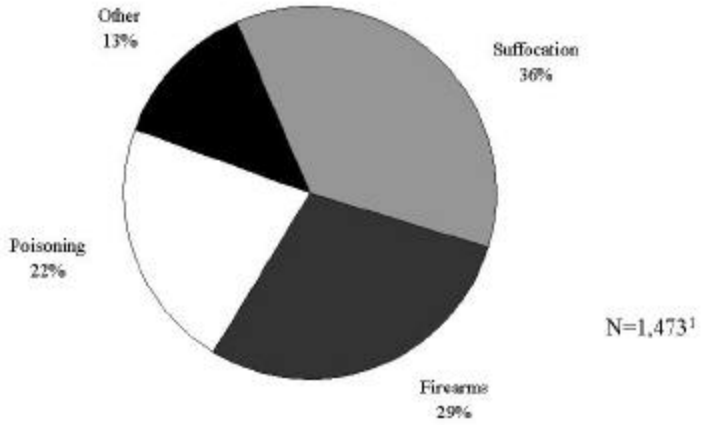
Data source: MDPH, Registry of Vital Records & Statistics

1 Number of suicide deaths per 100,000 persons in each age group ; average annual rate. N=1,473 suicide deaths between 1996-1998.
2 Rates are based on average annual number of suicide deaths and the average population between 1992-98. Seven years of data were used to avoid small numbers. Rates are age-adjusted.
3 N = total number of suicide deaths for all seven years in each race and sex category.

1d. Method

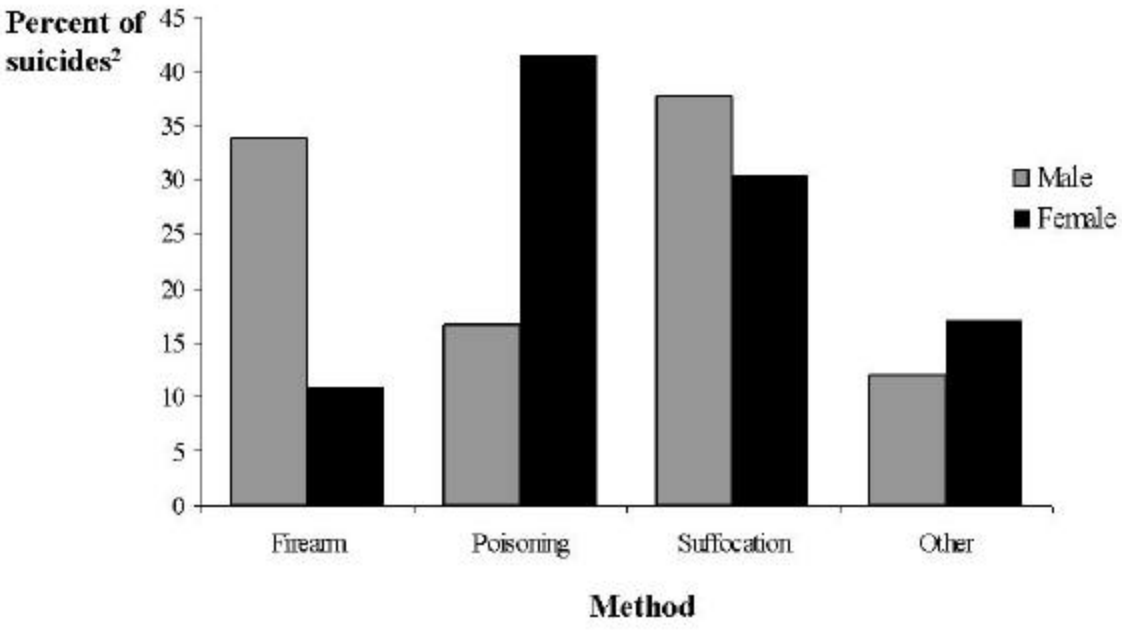
The three most common methods of suicide in Massachusetts are suffocation (including hanging), firearms, and poisoning (Figure 7). Selection of suicide method varies by sex. For males, suffocation and firearms are most common followed by poisoning. For females, poisoning predominates followed by suffocation and firearms (Figure 8). Approximately 84% percent of self-inflicted firearm injuries are fatal[3] whereas the majority of poisonings are non-fatal. This may help explain the higher death rate among males.

Figure 7. Suicide by Method, Age 10-65+, Massachusetts, 1996-1998



Data source: MDPH, Registry of Vital Records & Statistics

Figure 8. Suicide by Method and Sex, Age 10-65+, Massachusetts, 1996-1998



Data source: MDPH, Registry of Vital Records & Statistics

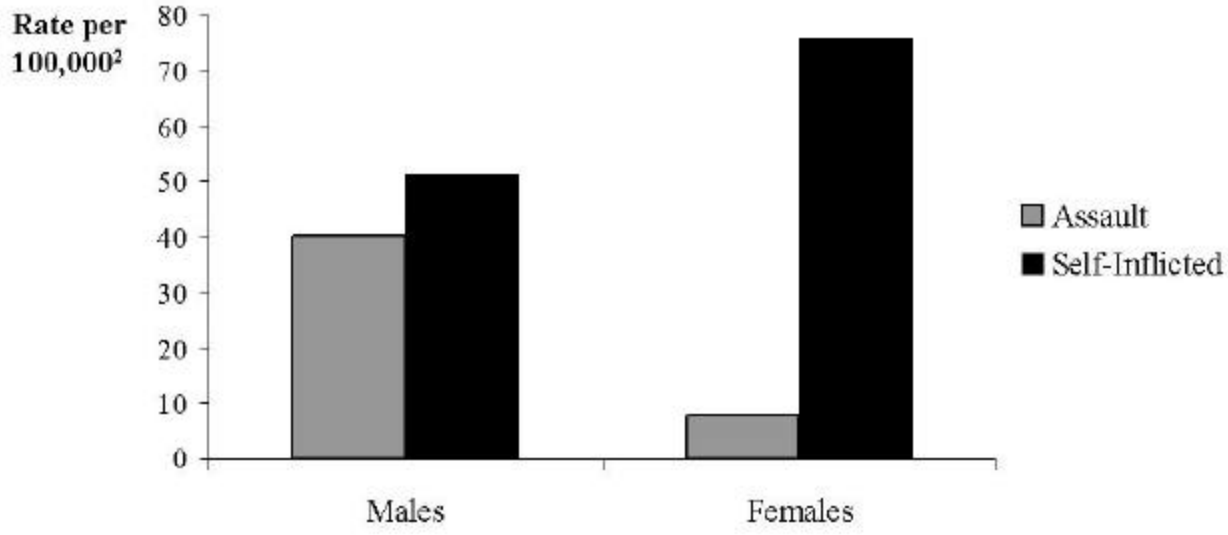
1 N = total number of suicide deaths between 1996-1998.
2 Three year total for males, N=1,162; for females, N=311.
3 Barber, Catherine, Ozonoff, Victoria et al, "When Bullets Don't Kill", Public Health Reports, November / December 1996, Vol. 111, No. 6.

Hospitalizations for Self-Inflicted Injury

2a. Overview

Data on hospitalizations in Massachusetts for self-inflicted injuries are obtained from the Massachusetts Hospital Discharge Database. Acute care hospitals are mandated to submit demographic and diagnostic data on all discharges to the Massachusetts Division of Health Care Finance and Policy. Since this database does not include suicidal injuries treated in Emergency Departments, psychiatric or Veteran's Administration hospitals, corrections facilities, or by health professionals outside of a hospital setting, the number of cases is not complete[1]. No data system exists for capturing the full scope of suicide attempts in Massachusetts.

Figure 9. Assault and Self-inflicted Injury Hospitalizations by Sex, Age 10-65+, Massachusetts, 1996-1998



Data source: Division of Health Care Finance and Policy, Massachusetts Hospital Discharge Database

In a pattern that reflects death rates, hospitalizations for self-inflicted injuries are greater than those for assault-related injuries for both males and females (Figure 9). Overall, the average annual number of hospitalizations for self-inflicted injuries was 3,466 and for assaults was 1,248.

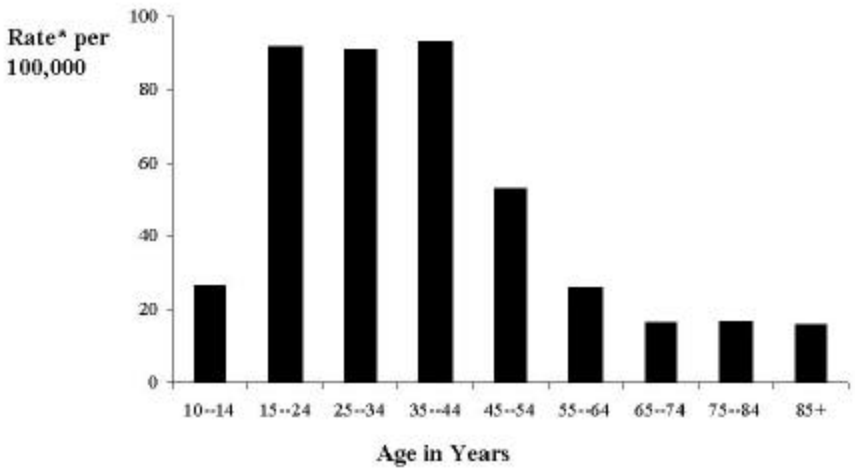
1 Also limiting data: external cause of injury coding (E coding) rate of less than 100% among Massachusetts hospitals.

2 Rates are based on the average annual number of self-inflicted injury hospitalizations and average population between 1996-98.

2b. Age and Sex

With regard to age, self-inflicted injury hospitalizations show a different pattern from completed suicides. Hospitalization rates dramatically increase after age 14, then drop off in older age groups (Figure 10). In contrast, death rates are lower in younger age groups and increase throughout the lifespan (Figure 4).

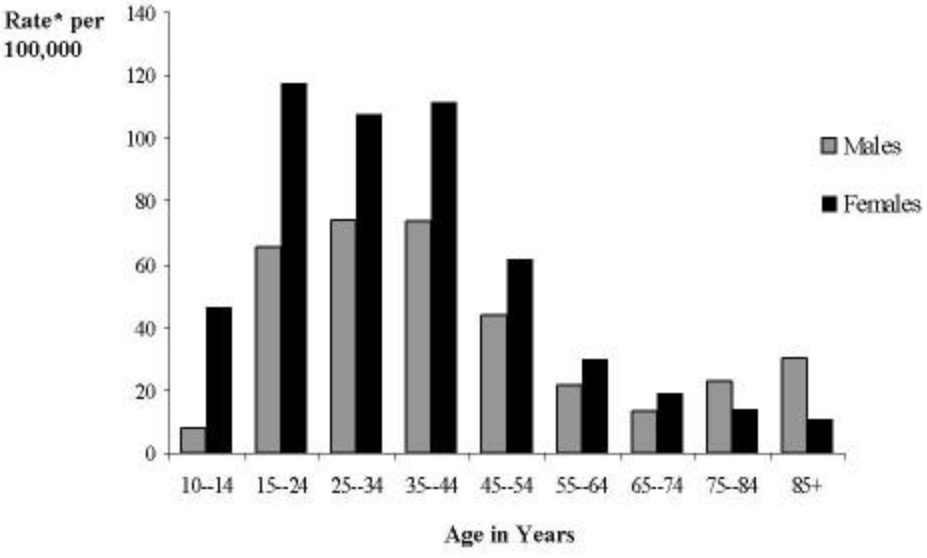
Figure 10. Self-inflicted Injury Hospitalization Rate by Age, Massachusetts, 1996-1998



Data source: Division of Health Care Finance and Policy, Massachusetts Hospital Discharge Database

Females are hospitalized for self-inflicted injury at a higher rate than males, a fact that may be related to the method used. For example, women tend to attempt suicide by poisoning, which is more likely to be nonfatal. Men, however, often attempt suicide using more lethal means: firearms or suffocation. Young women ages 15-24 are at highest risk for self-inflicted injury (Figure 11).

Figure 11. Self-inflicted Injury Hospitalization Rate by Age and Sex, Massachusetts, 1996-1998



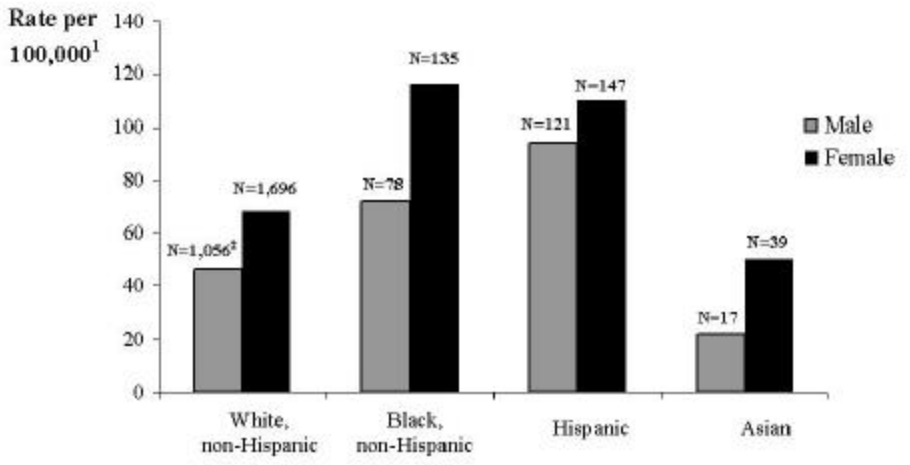
Data source: Division of Health Care Finance and Policy, Massachusetts Hospital Discharge Database

* Number of hospitalizations for self-inflicted injury per 100,000 persons in each age group; average annual rate based on average population, 1996-98. N=10,398 total number of hospitalizations for self-inflicted injury, 1996-98.

2c. Race and Ethnicity

When examined by race/ethnicity, hospitalization rates for self-inflicted injury differ from death rates. While White non-Hispanics have the highest suicide rates, Black non-Hispanics and Hispanics have the highest rates of hospitalization for self-inflicted injuries (Figure 12).

Figure 12. Self-inflicted Injury Hospitalization Rate by Race/Ethnicity and Sex, Age 10-65+, Massachusetts, 1996-1998

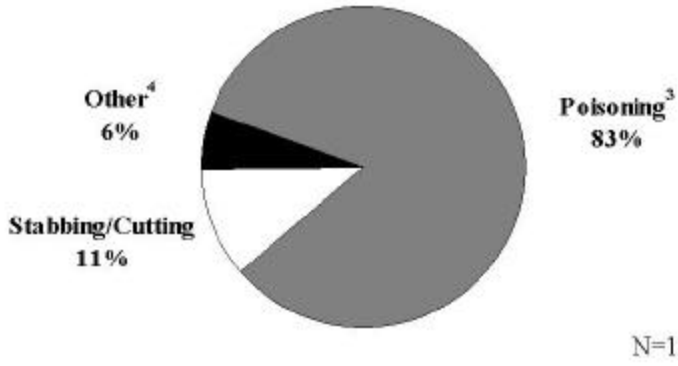


Data source: Division of Health Care Finance and Policy, Massachusetts Hospital Discharge Database

2d. Method

The majority (83%) of hospitalizations for self-inflicted injuries result from poisoning (Figure 13). Stabbing and cutting account for 11% of these hospitalizations, while the most lethal methods, firearm and suffocation, account for less than 2% combined. Unlike completed suicides, non-fatal self-inflicted injuries do not show a pronounced variation in method by sex. Females have a slightly higher percentage of poisonings (86.5% vs. 78% for males) and males have slightly higher rates of stabbing and cutting (13.6% vs. 9.6% for females).

Figure 13. Self-inflicted Injury Hospitalizations by Method, Age 10-65+, Massachusetts, 1996-1998



Data source: Division of Health Care Finance and Policy, Massachusetts Hospital Discharge Database

1 Number of hospitalizations for self-inflicted injury per 100,000 persons in each race/ethnic group. Rates based on average number of hospitalizations and the average population between 1996-1998.
2 N = average annual number of hospitalizations for self inflicted injury.
3 Includes poisoning by solid or liquid substance, gases in domestic use, and other gases and vapors.
4 Includes hanging, submersion, firearms, jumping from high place, other and unspecified means, and late effects of self-inflicted injury.
5 N = Three year total.

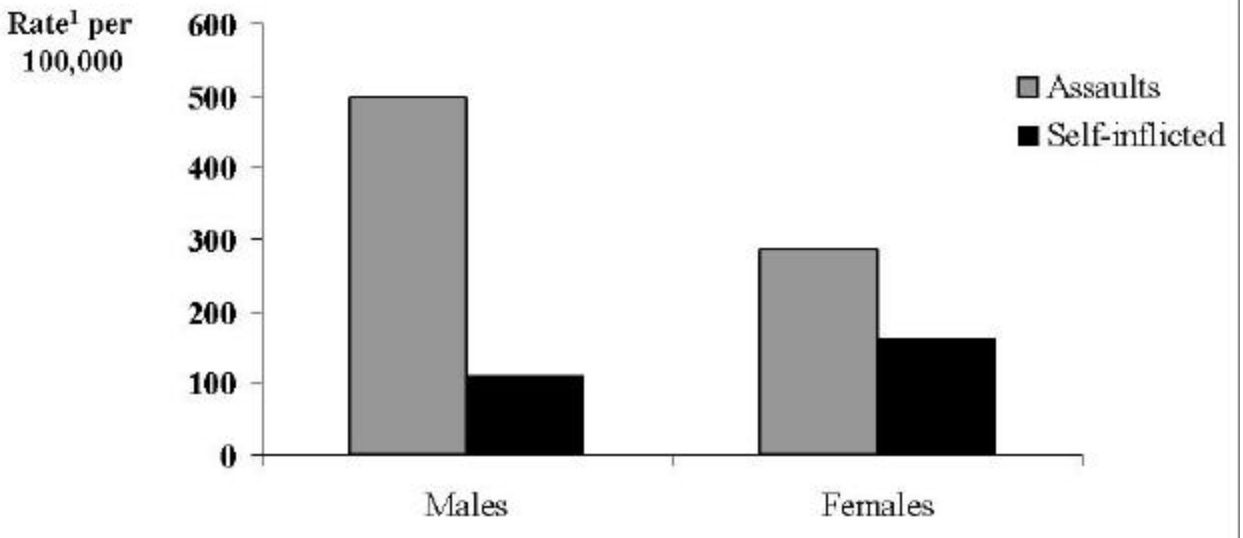
Emergency Department Treated Self-Inflicted Injuries

3a. Overview

Data on patients who are treated and released from acute care hospital Emergency Departments (ED) for self-inflicted injuries have been collected at the MDPH since 1999. In this report, the numbers are presented as statewide estimates based on a sample of participating hospitals. This information is critical to gain a more complete picture of self-inflicted injury in Massachusetts; through incorporating ED data with existing death and hospitalization data, we widen our understanding of the scope of the problem and the populations at risk. Prior to the implementation of an ED surveillance system, these injuries could not be counted.

Unlike deaths and hospitalizations, there are more assaults treated and released from the ED than self-inflicted injuries (Figure 14). This may reflect hospital policies that encourage or mandate admission of patients presenting with self-injury or suicidal ideation. Overall, more females than males are treated in the ED for suicide attempts, though the opposite is true for assaults.

Figure 14. Estimated Assault and Self-inflicted Injury Emergency Department Visit Rates by Sex, Age 10-65+, Massachusetts, 1999



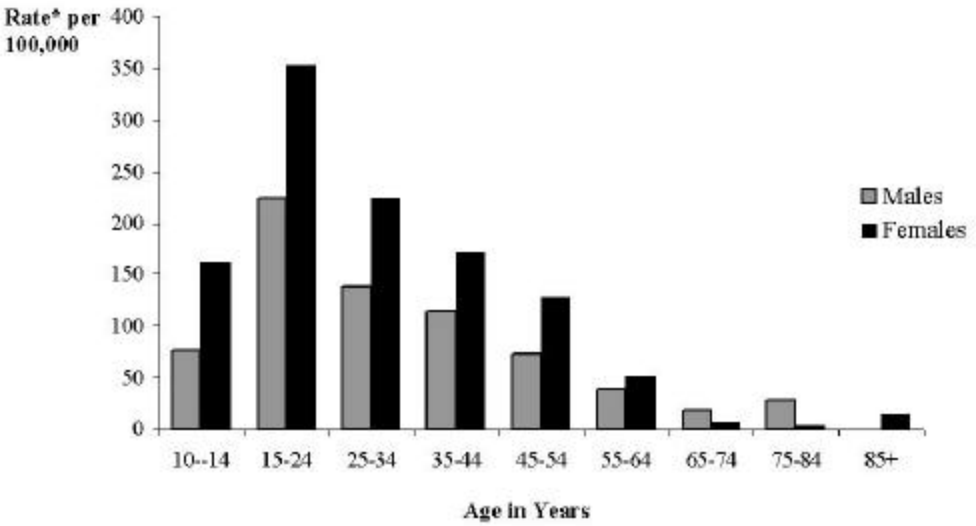
Data source: MDPH, Injury Surveillance Program

1 Number of ED visits for self-inflicted injury per 100,000 persons of each sex. 1997 population used to calculate rates.

3b. Age and Sex

Male and female ED visit rates follow a similar pattern by age: self-inflicted injuries peak in 15-24 year olds, then steadily decline throughout the lifespan (Figure 15). This is similar to trends in hospitalization rates (see Figure 11), but differs from death rates, which tend to increase with age, especially for males (see Figure 5).

Figure 15. Estimated Emergency Department Visit Rates for Self-inflicted Injury, by Age and Sex, Massachusetts, 1999

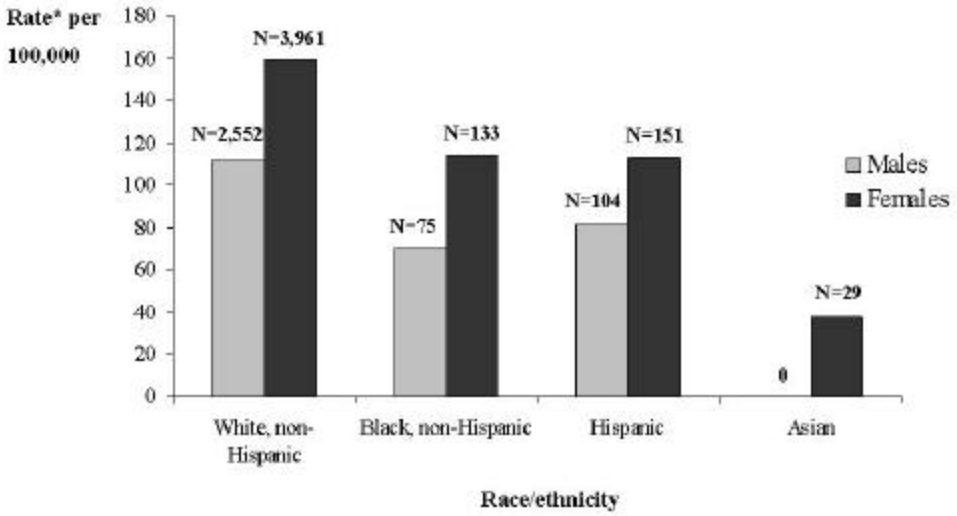


Data source: MDPH, Injury Surveillance Program

3c. Race and Ethnicity

Across the race and ethnic groups examined, females have higher rates of ED treated self-inflicted injury than males. White non-Hispanic females have the highest rates of all, followed by Black non-Hispanic and Hispanic females. Among males, white non-Hispanics attempted at the highest rate, followed by Hispanic males. There were no cases identified for Asian males (Figure 18) in the database sample.

Figure 16. Estimated Emergency Department Visit Rates for Self-inflicted Injury, by Race/ethnicity and Sex, Age 10-65+, Massachusetts, 1999



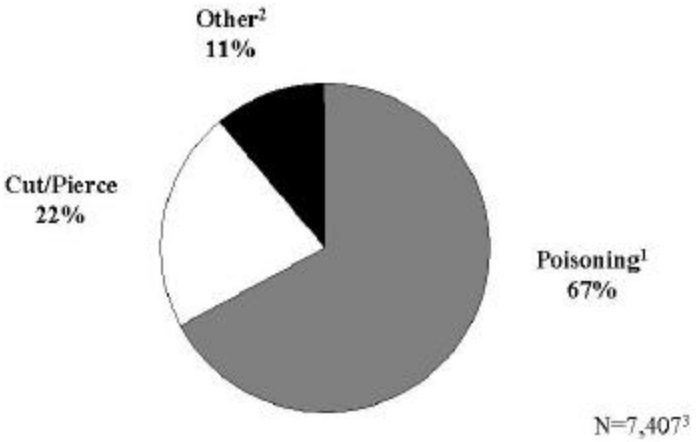
Data source: MDPH, Injury Surveillance Program

* Number of ED visits for self-inflicted injury per 100,000 persons in each age group. 1997 population used to calculate rates.

3d. Method

Similar to hospitalizations, the most common self-inflicted injuries seen in the ED were poisonings and cut/piercings (Figure 17). There was little difference in method when examined by sex.

Figure 17. Estimated Emergency Department Visits for Self-inflicted Injury by Method, Age 10-65+, Massachusetts, 1999



Data source: MDPH, Injury Surveillance Program

Adolescent Suicidal Behavior

4a. Overview

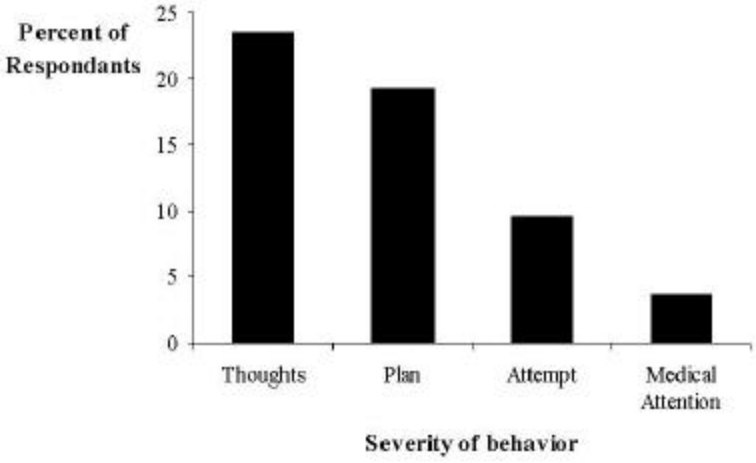
The Massachusetts Youth Risk Behavior Survey (MYRBS) is an anonymous written questionnaire that collects self-reported data on a variety of health-related topics from high school students. Developed by the U.S. Centers for Disease Control and Prevention and administered by the Massachusetts Department of Education, the MYRBS has included questions on suicide since 1990. In 1997, the MYRBS was administered in 3 to 5 classes, grades 9 through 12, in each of 58 randomly selected Massachusetts public high schools. Those attending private or parochial schools, those in alternative placements, and those out of school are not included in the MYRBS. This survey is particularly useful for providing details about the behavioral and circumstantial issues surrounding suicide, which are often absent from traditional injury databases.

1 Includes poisoning by solid or liquid substance, gases in domestic use, and other gases and vapors.
2 Includes hanging, submersion, firearms, jumping from high place, other and unspecified means, and late effects of self-inflicted injury.
3 Estimated total number of ED visits for self-inflicted injuries, 1999.

4b. Massachusetts Youth Risk Behavior Survey Results[1]

Based on the MYRBS, each year one-quarter (approximately 24,000) of high school youth seriously consider suicide. Ten percent of respondents said they had attempted suicide, with almost four percent seeking medical attention as a result of their attempt (Figure 18). Female students reported suicidal thoughts and behaviors at twice the rate of males. There was no significant difference by race/ethnicity or between urban, suburban, and rural school districts.

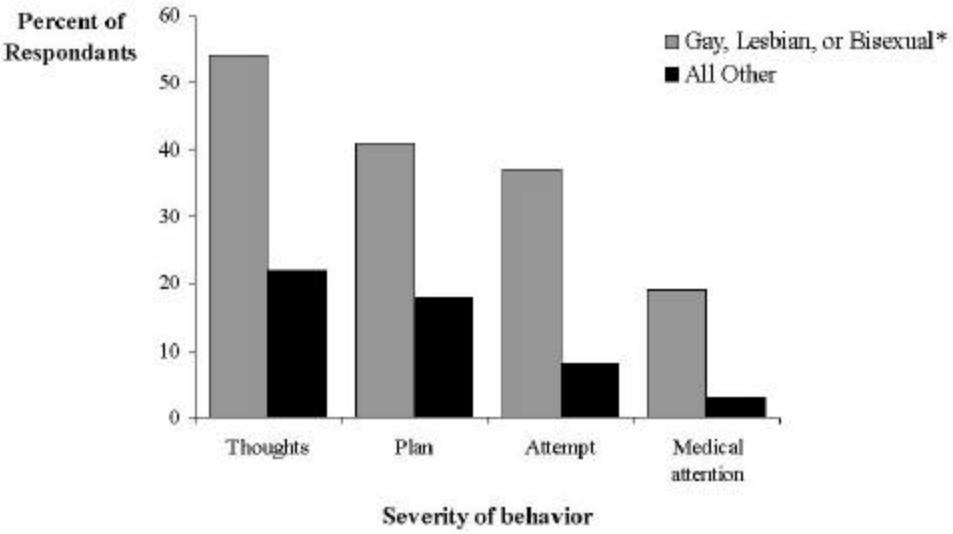
Figure 18. Percentage of High School Students Reporting Suicidal Behaviors by Severity of Behavior, Massachusetts, 1997



Source: Massachusetts Youth Risk Behavior Survey

Students who identified themselves as gay, lesbian or bisexual were four times more likely to have attempted suicide than other students (Figure 19). While the rates of completed suicides among adolescents in Massachusetts remain relatively low, reported suicidal ideation and behavior among Massachusetts' adolescents are higher than U.S. rates.

Figure 19. Severity of Suicidal Ideation and Behavior of High School Students, by Sexual Orientation, Massachusetts, 1997

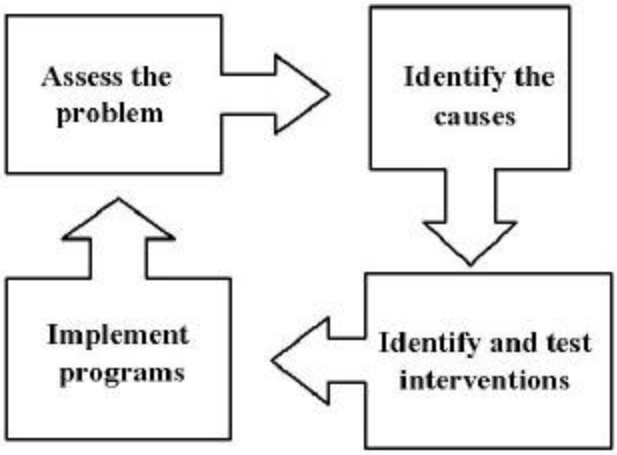


* and/or those who had any same-sex sexual experience
Source: Massachusetts Youth Risk Behavior Survey

1 1997 Massachusetts Youth Risk Behavior Survey, Massachusetts Department of Education.

The Public Health Approach to Suicide Prevention

Figure 20. The Public Health Approach to Prevention



Source: US Public Health Service, The Surgeon General's Call to Action to Prevent Suicide. Washington, D.C.: 1999.

Phase 1: Assess the Problem

Collecting information about suicide and suicidal behavior is the first phase of prevention. It is important to have information on suicides and self-inflicted injuries, including: characteristics of those who attempt or complete suicide and the circumstances of their attempts, stressful precipitating events, access to and quality of health services and support networks, and the severity, cost, and results of these injuries.

In Massachusetts there are several sources of this information: the Registry of Vital Records and Statistics at the Massachusetts Department of Public Health (MDPH) compiles data on suicides; the Massachusetts Hospital Discharge Database at the Division of Health Care Finance and Policy compiles data on self-inflicted injuries requiring admission to an acute care hospital; and at the MDPH, reports of self-inflicted injuries treated and released from acute care Emergency Departments are compiled by the Injury Surveillance Program.

Phase 2: Identifying Causes and Risk Factors

The second phase addresses the "why" of suicidal behavior. It involves assessing risk factors such as depression or other mental illness, alcohol and other drug use, family history, relationship or job loss, or other stressful life circumstances, all factors that may identify those at higher risk for suicide. It remains unclear how risk and protective factors interact or how their inter-relationship can be modified for effective prevention, and identifying the causal chain is necessary in order to develop interventions. By tracking trends in suicide and self-inflicted injuries, MDPH can identify individual and community risk factors and to promote local prevention and intervention.

Phase 3: Identifying and Testing Interventions

In the next phase, strategies are developed to address identified risk factors and causes. Testing the effectiveness of each strategy is critical to ensure that strategies are ethical, feasible, and safe. Pilot testing with evaluation can help determine the most effective prevention strategy for different target populations, as results may differ among particular age, gender, ethnic, sexual orientation, and cultural groups.

For example, the Massachusetts Youth Risk Behavior Survey has identified the increased risk of suicidal ideation and behavior among gay/lesbian/bisexual teens. As a result, schools have been encouraged to support gay/straight alliances to provide peer social support for students identifying or questioning as gay/lesbian/bisexual/transgender and their friends. In 1993, Massachusetts became the first state to ban anti-gay discrimination in its public schools.

Phase 4: Implementing Interventions

In the fourth phase, interventions proven effective in preventing suicide and suicidal behavior are implemented. From here, ongoing data collection and program evaluation are essential to gauge effectiveness, redefine the scope as needed, and identify criteria to enhance and extend successful suicide prevention programs.

Communities have much to consider as these prevention programs are developed and practiced. Strategies that involve coalitions of traditionally separate domains, such as health care, mental health systems, faith-based organizations, elder services, child care and education, social services, civic groups, and public health are more likely to succeed because they reach a wide audience. It is also critical to adjust and adapt interventions in response to the experiences of clients and survivors, and to reflect community culture, values, standards, and norms. Interventions must be relevant to all racial, ethnic, and cultural groups within the community. Since ongoing data collection and program evaluation are essential to gauge effectiveness, the process then returns to phase one: collecting information about suicide and suicidal behavior.

At MDPH, injury prevention staff work directly with community-based programs and coalitions. They facilitate collaborations, provide statistics and suggest ways to use data, and serve as resources to communities and individuals seeking to prevent and reduce suicide and self-inflicted injuries.

Appendices

APPENDIX A. Selected Suicide Prevention Organizations / Websites

American Academy of Child and Adolescent Psychiatry
www.aacap.org
3615 Wisconsin Avenue, NW
Washington D.C. 20016
phone: 202-966-7300
fax: 202-966-2891
The AACAP widely distributes information in an effort to promote an understanding of mental illnesses and remove the stigma associated with them, advance efforts in prevention of mental illnesses, and assure proper treatment and access to services for children and adolescents.

American Academy of Pediatrics (AAP)
www.aap.org/
141 Northwest Point Boulevard
Elk Grove Village, Illinois 60007-1098
phone: 847-434-4000
fax: 847-434-8000
This organization comprises 55,000 primary care pediatricians, pediatric medical specialists, and pediatrical surgical specialists. This site provides information on child health, advocacy, and safety. The site includes family-oriented publications, including one on adolescent development and suicide, and an on-line bookstore.

American Association of Suicidology
www.Suicidology.org
4201 Connecticut Ave., NW #310
Washington, D.C. 20008
phone: 202-237-2280
fax: 202-237-2282
Dedicated to the understanding and prevention of suicide. AAS promotes research, public awareness programs, education and training for professionals and volunteers, and serves as a national clearinghouse for information on suicide.

American Foundation for Suicide Prevention
www.afsp.org
120 Wall Street, 22nd Floor
New York, New York 10005
phone: 888-333-AFSP, 212-363-3500
fax: 212-363-6237
Funds research, education and treatment aimed at the prevention of suicide. Maintains a national directory of survivor support groups.

American Psychological Association
www.apa.org
750 First Street, NE
Washington, DC 20002
phone: 202-336-5500
fax: 202-336-5501
The largest scientific and professional organization representing psychology in the United States and the world's largest association of psychologists, APA works to advance psychology as a science, as a profession, and as a means of promoting human welfare.

Centers for Disease Control and Prevention (CDC) National Center for Injury Prevention and Control
www.cdc.gov/ncipc/dvp/suifacts/htm
Mailstop K65
4770 Buford Highway, NE
Atlanta, GA 30341-3724
phone: 770-488-1506
fax: 770-488-1667
The National Center for Injury Prevention and Control (NCIPC) is working to raise awareness of suicide as a serious public health problem, and is focusing on science-based prevention strategies to reduce injuries and deaths due to suicide.

Center for School Mental Health Assistance
csmha.ab.umd.edu
University of Maryland at Baltimore
680 West Lexington St., 10th Fl
Baltimore, MD. 21201-1570
phone: 888-706-0980
fax: 410-706-0984
Provides leadership and technical assistance to advance effective interdisciplinary school-based mental health programs. The Center offers a forum for training, the exchange of ideas, and promotion of coordinated systems of care that provide a full continuum of services to enhance mental health, development and learning in youth.

(continued on following page)

Center to Prevent Handgun Violence
www.HandgunControl.org
1225 Eye Street, NW, Suite 1100
Washington, DC 20005
phone: 202-898-0792
fax 202-371-9615
The Center to Prevent Handgun Violence is the education, legal advocacy, and research affiliate of Handgun Control, Inc. CPHV's national initiatives include prevention programs for parents and youth on the risks associated with guns, legal representation for gun violence victims, and outreach to the entertainment community to encourage the deglamorization of guns in the media. Together HCI and CPHV have developed a comprehensive plan to reduce gun injuries and deaths in America.

The Gay, Lesbian and Straight Education Network
www.glsen.org
121 West 27th Street #804
New York, NY 10001
phone: 212-727-0135
fax: 212-727-0245
GLSEN strives to assure that each member of every school community is valued and respected, regardless of sexual orientation, by teaching the lesson of respect for all in public, private, and parochial K-12 schools. Founded as a small volunteer group in Boston in 1990, GLSEN led the fight that made Massachusetts the first state to ban discrimination against gay and lesbian students in public schools in 1993.

Health Resources and Services Administration (HRSA)
www.hrsa.dhhs.gov/
Parklawn Building, Room 14A46
5600 Fishers Lane
Rockville, Maryland 20857
phone: 301-443-2216
fax: 301-443-1246
HRSA directs national health programs which improve the health of the nation by assuring quality health care to underserved, vulnerable and special-needs populations and by promoting appropriate health professions' workforce capacity and practice, particularly in primary care and public health.

Maine Youth Suicide Prevention Web Site
www.state.me.us/suicide
Department of Human Services
Bureau of Health Childhood Injury Prevention and Control Program
11 Statehouse Station
Augusta, ME 04333
phone: 1-800-698-3624
The Maine Youth Suicide Prevention Program is a project of the governor of Maine and the Maine Children's Cabinet. The site provides information and suicide prevention resources for youth in Maine, including a Maine Crisis Hotline (phone: 1-888-568-1112). The site also includes guidelines and information for schools and the media.

Massachusetts Violence Prevention Task Force
www.violenceprevention.com
250 Washington Street, 4th Floor
Boston, MA 02108
phone: 617-624-5486
fax: 617-624-5075
A broad-based, culturally inclusive collaboration of legislators, federal, state, local, and community organizations and institutions committed to working together to attain peace, health, and justice for everyone in our Commonwealth.

Mental Health Net
www.cmhc.com
570 Metro Place North
Dublin, OH 43017
phone: 614-764-0143
fax: 614-764-0362
Provides a comprehensive source of online mental health information, news, and resources.

National Depressive and Manic-Depressive Association
www.ndmda.org/suicide.htm
730 N. Franklin Street, Suite 501
Chicago, Illinois 60610-3526
phone: 800-826-3632
fax: 312-642-7243
Seeks to educate patients, families, professionals, and the public on the nature of depressive and manic-depressive illness as treatable medical diseases; to foster self-help for patients and families; to eliminate discrimination and stigma; to improve access to care; and to advocate for research toward the elimination of these illnesses.

National Foundation for Depressive Illness Inc.
http:// www.depression.org/
P.O. Box 2257
New York, New York 10116
phone: 1-800-239-1265
The Foundation was established in 1983 to provide public and professional information about Affective Disorders, the availability of treatment, and the urgent need for further research.

National Institute of Mental Health (NIMH)
www.nimh.nih.gov/research/suicide.htm
6001 Executive Boulevard, Rm. 8184 MSC 9663
Bethesda, MD 20892-9663
phone: 301-443-8410
fax: 301-443-4279
The NIMH Suicide Research Consortium is comprised primarily of NIMH scientists across the Institute who also administer research grants. The Consortium coordinates program development in suicide research across the Institute, identifies gaps in the scientific knowledge base on suicide across the life span, stimulates and monitors extramural research on suicide, keeps abreast of scientific developments in suicidology and public policy issues related to suicide surveillance, prevention and treatment, and disseminates science-based information on suicidology to the public, media, and policy makers.

The National Mental Health Information Center (MHIC)
www.nmha.org
1021 Prince St.
Alexandria, VA 22314
phone: 1-800-969-NMHA (6642)
fax: 1-888-836-6070
Provides referrals to mental health services and local Mental Health Association's educational material about mental illnesses and mental health to: the public; local mental health associations; corporations, or other mental health organizations.

National Mental Health Services Knowledge Exchange Network (KEN)
www.mentalhealth.org
P.O. Box 42490
Washington, D.C. 20015
phone: 1-800-789-2647
fax: 301-984-8796
Provides a user-friendly, "one stop" gateway to a wide range of resources on mental health services. The KEN database provides current information about CMHS technical assistance centers; Federal, state, and local mental health agencies; other national clearinghouses and information centers; mental health organizations and professional associations; and consumer and family advocacy organizations.

The Samaritans
www.samaritansofboston.org
654 Beacon Street, 6th Floor
Boston, MA 02215
phone: 617-536-2460
fax: 617-247-0207
The Samaritans of Boston is a non-denominations not-for-profit volunteer organization dedicated to reducing the incidence of suicide by befriending individuals in crisis and educating the community about effective prevention strategies. Other Massachusetts Samaritans chapters include: The Samaritans of Merrimack Valley, 978-688-0030; The West Suburban Samaritans, 508-872-1780; The Samaritans of Cape Cod and the Islands, 508-548-7999; and the Fall River / New Bedford Samaritans, 508-999-7267.

Stop Handgun Violence
www.stophandgunviolence.com
1 Bridge Street, Suite 300
Newton, MA 02158
phone: 617-332-2317
Fax: 617-965-7308
Founded by a group of business people alarmed by the increasing number of gun deaths and injuries in America. Of the 38,800 gun-related deaths in 1995, over half were suicides or accidents and, therefore, seemed preventable. Stop Handgun Violence is dedicated to helping solve this epidemic of gun violence through education and awareness campaigns, community outreach, and corporate activism.

Substance Abuse and Mental Health Services Administration (SAMHSA)
www.samhsa.gov/
105 Parklawn Building
Fisher's Lane
Rockville, MD 20857
phone: 301-443-4795
fax: 301-443-0284
SAMHSA is the Federal agency charged with improving the quality and availability of prevention, treatment, and rehabilitation services in order to reduce illness, death, disability, and cost to society resulting from substance abuse and mental illnesses.

Suicide Information and Education Centre
www.suicideinfo.ca/siec.htm
201, 1615 - 10th Avenue S.W.
Calgary, Alberta, Canada T3C 0J7
phone: 403-245-3900
fax: 403-245-029
Maintains a resource library with extensive information on suicide prevention, postvention, and intervention efforts and trends, and can provide information to develop successful suicide prevention, intervention, and postvention programs, including statistics, resource people, computer literature searches, and document delivery.

Suicide Prevention Advocacy Network (SPAN)
www.spanusa.org
5034 Odin's Way
Marieta, GA 30068
phone: 888-649-1366
fax: 770-642-1419
A national grassroots, non-profit organization bridging all suicide prevention efforts to lower suicide rates (especially among young people) in the United States and worldwide. In October of 1998, SPAN hosted a National Planning Summit to develop a National Strategy for Suicide Prevention.

US Surgeon General's Office
www.surgeongeneral.gov
200 Independence Avenue, SW
Washington, DC 20201
phone: 202-690-6467
fax: 301-443-8590
Has published 'The Surgeon General's Call to Action to Prevent Suicide' and 'Mental Health: A Report of the Surgeon General', and is developing a National Suicide Prevention Strategy. Publications are available online.

Washington State Youth Suicide Prevention Program
http://depts.washington.edu/ysp
Youth Suicide Prevention Program University of Washington
Box 357263
Seattle, WA 98195
phone: 206-543-8552.
fax: 206-685-9551
Concerned citizens and health professionals banded together to form a "grass roots" movement in 1992 to address the problem of youth suicide, which is the second leading cause of death among youth aged 15-24 years in Washington State. The overall goals are to reduce youth suicide and suicidal behaviors in Washington,, reduce the impact of suicidal behaviors on significant others, and improve access and availability of prevention services statewide.

(Disclaimer: The sites listed here have been identified based on their relevance to suicide prevention. Views expressed on the web sites are not necessarily those of the Massachusetts Department of Public Health or of the Injury Prevention and Control Program. When viewing a web site, please consider the source.)

This summary was produced by the Injury Prevention and Control Program of the Massachusetts Department of Public Health.

Injury Prevention and Control Program
250 Washington Street, 4th Floor
Boston, MA 02108

Phone: (617) 624-5070

June 2000

APPENDIX B. Methodology

Case selection criteria for death, hospitalization, and Emergency Department data for all injuries included in this report are the following:

- Injuries were defined using external cause of injury codes (E codes) from the International Classification of Disease, Version 9 (ICD-9) for mortality and the Clinical Modification (ICD-9-CM) for morbidity. For fatal and nonfatal self-inflicted injuries, cases with a principle E code of E950-E959 were selected.
- This report includes only Massachusetts residents, defined by the post office zip code of their home address, despite the place of occurrence of the injury. Suicidal injuries to residents of other states that were treated in Massachusetts hospitals were excluded.
- Only ages 10 and over were included.
- Adverse effects and legal intervention injuries were excluded from total injury cases.

Population estimates for 1997 were obtained from the Massachusetts Institute for Social and Economic Research (MISER).

Mortality Data

The source of suicide data for this report was the Registry of Vital Records and Statistics at the Massachusetts Department of Public Health. These data are based on calendar year (January – December).

Estimates for certain population subgroups may be based on small numbers. According to the National Center for Health Statistics, when the number of events is less than 20, considerable caution must be observed in interpreting the conditions described by the rates.

Hospital Discharge Data

Hospitalization data were queried from the Massachusetts Hospitalization Discharge Database at the Division of Health Care Finance and Policy. As of 1994, E codes are required on all injury-related hospital discharges. However, the E coding rate is not 100% in Massachusetts, so these data are most likely an underestimate of the true impact. The data are based on hospital fiscal year (October 1 – September 30). Differences between fiscal year and calendar year are negligible. Patients who died during their hospital stay are excluded; these cases are instead captured in the death data to avoid double counting.

For the purpose of this report, the inclusive term “self-inflicted injury” is used to describe all nonfatal injuries that were **intentionally** self-inflicted. These include suicide attempts as well as other types of self mutilation or harm.

Emergency Department Outpatient Data

Emergency Department (ED) data were obtained from the Injury Surveillance Program at the Massachusetts Department of Public Health. This pilot ED surveillance database captures outpatient injuries in a representative sample of acute care hospitals throughout the Commonwealth. Since ED reporting with E coded outpatient visits is not mandated in Massachusetts, current ED surveillance is limited to hospitals voluntarily participating in the system. The case numbers are then adjusted to provide statewide estimates. The data are based on hospital fiscal year (October – September). Differences between fiscal year and calendar year are negligible. Patients admitted through the ED to an acute-care hospital are excluded; these cases are instead included in the hospitalization data to avoid double counting.

Massachusetts Youth Risk Behavior Survey Data

The MYRBS is a voluntary, anonymous student health survey conducted every two years by the Massachusetts Department of Education to monitor the prevalence of adolescent risk behaviors. The final survey in 1997 consisted of 94 multiple-choice questions, including several concerning students' suicidal thoughts and behaviors during the previous twelve months. It was administered in three to five classes, grades 9 through 12, in 58 randomly selected public high schools across the state. The 1997 MYRBS was completed by 3,982 students and achieved response rates that were high enough to indicate that the results were representative of adolescents in public high schools across the state. In general, the 1997 MYRBS estimates of health behaviors are accurate to within plus or minus three percentage points.

APPENDIX C. E Codes Used for Categorizing Method of Suicide and Self-Inflicted Injury

Method of Suicide/Self-Inflicted Injury	E code
Cut/pierce *Cutting and piercing by instruments or objects*	E956
Drowning/submersion *Drowning and submersion with and without involvement of watercraft*	E954
Falls *Jumping from high place*	E957.0-E957.9
Fire/flames; hot object or substance *Intentionally self-inflicted burns*	E958.1, E958.2, E958.7
Firearm *Includes handgun, shotgun, hunting rifle, military firearm, flare, or unspecified gunshot wounds*	E955.0-E955.4
Motor vehicle traffic *Motor vehicle traffic injuries involving automobiles, vans, trucks, or motorcycles not in traffic, other surface transport, water and aircraft.*	E958.5
Transport, other *Includes railway, off-road, and other motor vehicles not in traffic, other surface transport, water and aircraft*	E958.6
Natural/environmental *Excessive heat, cold, hunger, and exposure to weather conditions*	E958.3
Poisoning *Drugs, alcohol, other solid/liquid substances, gases, and vapors*	E950.0-E952.9
Suffocation *Inhalation or ingestion of food or other objects and suffocation by other mechanical means that hinder breathing (e.g. plastic bag over face, suffocation by bedding, hanging)*	E953.0-E953.9
Other specified and classifiable *Includes injuries that are not assigned to specific injury categories*	E955.5, E955.9 E958.0, E958.4
Other specified, not elsewhere classifiable *Includes causes of injury that have been reported on the death certificate but for which no specified E code exists*	E958.8, E959
Unspecified *Includes injuries where the cause is not reported*	E958.9
All Suicides/Self-Inflicted Injuries	**E950-E959**

APPENDIX D. Data Tables

Table 1. Suicide by Age and Sex, MA, 1996-1998						
	Males			Females		
Age	MAF[1]	1997 Pop.	Rate[2]	MAF	1997 Pop.	Rate
10--14	4	199263	---[3]	0	189158	---
15--19	24	207139	11.6	1	203601	---
20--24	30	230140	13.0	5	233755	2.1
25--29	36	256137	14.1	5	255628	2.0
30--34	43	255510	16.8	13	256963	5.1
35--39	54	260595	20.7	14	265304	5.3
40--44	38	240396	15.8	18	249333	7.2
45--49	35	214255	16.3	13	225445	5.8
50--54	29	174461	16.6	7	184575	3.8
55--59	21	124059	16.9	6	134385	4.5
60--64	14	104206	13.4	4	116112	---
65--69	11	99675	11.0	5	120667	4.1
70--74	18	89113	20.2	4	120399	---
75--79	11	66029	16.7	2	103294	---
80--84	11	39273	28.0	4	75514	---
85+	10	29558	33.8	3	84700	---
Total	387	2589809	14.9	104	2818833	3.7

1 MAF = Mean Annual Frequency
2 Rate = (MAF/Population) * 100,000. Caution: Rates calculated on Frequency <20 are unstable and therefore should be interpreted with caution.
3 Calculations based on fewer than 5 events are excluded.

Table 2. Suicide by Race/Ethnicity and Sex, MA, 1992-1998												
	White, non-Hispanic				Black, non-Hispanic				Hispanic			
	Males		Females		Males		Females		Males		Females	
	Freq.[4]	Rate[5]	Freq.	Rate	Freq.	Rate	Freq.	Rate	Freq.	Rate	Freq.	Rate
1992	408	15.3	102	3.5	19	11.9	3	---[6]	10	7	2	---
1993	326	11.3	111	3.6	15	9.5	3	---	20	16.1	1	---
1994	377	12.5	107	3.3	15	9.7	2	---	15	11.6	0	---
1995	348	12	112	3.5	18	11.5	11	6.6	22	15.5	5	4.6
1996	364	12.6	97	2.9	9	4.1	0	---	13	7.4	3	---
1997	372	12.3	88	2.7	15	9.6	2	---	10	6	2	---
1998	365	12	105	3.1	13	8.2	3	---	14	8.5	0	---
Total	2560	12.6	722	3.2	104	9.2	24	1.7	104	10.3	13	1.0

4 Annual Frequency
5 Rate = (Frequency/Population) * 100,000. Average population for given years used. Caution: Rates calculated on Frequency <20 are unstable and therefore should be interpreted with caution.
6 Calculations based on fewer than 5 events are excluded.

Table 3. Suicide and Homicide, by year, MA, 1950-1998									
	Suicide		Homicide			Suicide		Homicide	
	Freq.[1]	Rate[2]	Freq.	Rate		Freq.	Rate	Freq.	Rate
1950	504	10.7	62	1.3	1975	572	9.9	234	4.0
1951	464	9.8	48	1.0	1976	567	9.9	209	3.7
1952	419	8.8	47	1.0	1977	564	9.5	179	3.0
1953	365	7.6	56	1.2	1978	516	8.8	214	3.6
1954	382	7.9	44	0.9	1979	519	8.9	209	3.6
1955	416	8.6	56	1.2	1980	471	8.2	248	4.3
1956	417	8.5	60	1.2	1981	511	8.9	229	4.0
1957	398	8.1	66	1.3	1982	538	9.4	239	4.2
1958	420	8.5	49	1.0	1983	529	9.2	197	3.4
1959	409	8.2	55	1.1	1984	535	9.2	212	3.7
1960	421	8.2	63	1.2	1985	547	9.4	220	3.8
1961	442	8.5	73	1.4	1986	543	9.3	218	3.7
1962	408	7.8	79	1.5	1987	577	9.9	195	3.3
1963	476	9.0	106	2.0	1988	500	8.5	237	4.0
1964	460	8.6	103	1.9	1989	523	9.1	228	4.0
1965	446	8.4	120	2.3	1990	545	9.1	270	4.5
1966	419	7.6	120	2.2	1991	504	8.3	269	4.5
1967	410	7.4	155	2.8	1992	541	8.9	228	3.8
1968	431	7.7	175	3.1	1993	464	7.6	248	4.1
1969	485	8.6	164	2.9	1994	508	8.3	232	3.8
1970	511	9.0	184	3.2	1995	496	8.1	224	3.7
1971	505	8.9	216	3.8	1996	483	7.8	191	3.1
1972	506	8.9	242	4.2	1997	487	7.8	137	2.2
1973	553	9.7	287	5.0	1998	503	7.3	123	2.1
1974	506	8.9	271	4.7					

7 Annual Frequency

8 Rate = (Frequency/Population) * 100,000. Caution: Rates calculated on Frequency <20 are unstable and therefore should be interpreted with caution.

Table 4. Suicide by Method and Sex, MA, 1996-1998				
	Males		Females	
Method[1]	MAF[2]	Percent[3]	MAF	Percent
Poisoning	64	16.6	43	41.4
Suffocation	146	37.7	32	30.8
Drowning/submersion	6	1.6	5	4.8
Firearm	131	33.9	11	10.6
Cut/Pierce	10	2.6	2	---
Falls	15	3.9	5	4.8
Other/unspecified	14	3.6	6	5.8
Late effects	1	---[4]	0	---
TOTAL	387	100	104	100.0

1 See Appendix C for further description of methods.
2 MAF = Mean Annual Frequency
3 Percent column may not add up to 100 due to rounding.
4 Calculations based on fewer than 5 events are excluded.

Table 5. Hospitalizations for Self-Inflicted Injury by Age and Sex, MA, 1996-1998						
	Males			Females		
Age	MAF	1997 Pop.	Rate[5]	MAF	1997 Pop.	Rate
10--14	16	199263	8.0	88	189158	46.5
15--19	136	207139	65.7	302	203601	148.3
20--24	152	230140	66.0	212	233755	90.7
25--29	171	256137	66.8	243	255628	95.1
30--34	207	255510	81.0	308	256963	119.9
35--39	210	260595	80.6	326	265304	122.9
40--44	159	240396	66.1	249	249333	99.9
45--49	117	214255	54.6	151	225445	67.0
50--54	54	174461	31.0	102	184575	55.3
55--59	31	124059	25.0	49	134385	36.5
60--64	19	104206	18.2	26	116112	22.4
65--69	15	99675	15.0	24	120667	19.9
70--74	10	89113	11.2	22	120399	18.3
75--79	14	66029	21.2	15	103294	14.5
80--84	10	39273	25.5	10	75514	13.2
85+	9	29558	30.4	9	84700	10.6
TOTAL	1330	2589809	51.4	2136	2818833	75.8

5 Rate = (MAF/Population) * 100,000. Caution: Rates calculated on MAF <20 are unstable and therefore should be interpreted with caution.

Table 6. Hospitalizations for Self-Inflicted Injury by Race, Sex, and Age, MA 1996-1998																
	White, non-Hispanic				Black, non-Hispanic				Hispanic				Asian/Pacific Islander			
	Males		Females		Males		Females		Males		Females		Males		Females	
	MAF[1]	Rate[2]	MAF	Rate	MAF	Rate	MAF	Rate	MAF	Rate	MAF	Rate	MAF	Rate	MAF	Rate
10--14	10	6.0	57	36.1	---[3]	9.8	6	59.6	---	6.6	11	76.4	---	---	---	14.8
15--19	102	58.6	196	114.8	8	73.5	30	274.8	15	102.2	36	249.1	---	---	10	132.0
20--24	113	58.1	151	76.5	9	75.6	21	167.6	15	96.2	16	105.0	---	---	9	105.8
25--29	125	57.7	194	89.6	14	106.7	18	135.6	24	139.1	18	105.8	---	---	6	67.9
30--34	158	72.6	249	113.7	16	131.3	21	170.4	24	146.2	21	128.0	---	---	---	---
35--39	173	76.4	271	117.3	12	104.5	17	145.5	20	145.0	21	152.0	---	---	---	---
40--44	134	62.9	215	97.2	6	62.3	11	111.6	10	97.3	14	130.1	---	---	---	---
45--49	102	52.8	126	62.1	6	78.7	6	72.5	5	66.4	7	85.3	---	---	---	---
50--54	46	28.8	93	55.2	---	---	---	---	---	---	---	---	---	---	---	---
55--59	25	22.1	46	37.6	---	---	---	---	---	---	---	---	---	---	---	---
60--64	16	175.4	23	21.6	---	---	---	---	---	---	---	---	---	---	---	---
65--69	13	13.9	23	20.4	---	---	---	---	---	---	---	---	---	---	---	---
70--74	9	9.5	21	18.5	---	---	---	---	---	---	---	---	---	---	---	---
75--79	12	19.1	13	13.2	---	---	---	---	---	---	---	---	---	---	---	---
80--84	9	24.0	10	13.8	---	---	---	---	---	---	---	---	---	---	---	---
85+	9	32.4	8	9.9	---	---	---	---	---	---	---	---	---	---	---	---
TOTAL	1056	46.4	1696	68.1	78	72.6	135	115.8	121	93.9	147	110.2	17	21.9	39	50.3

1 MAF = Mean Annual Frequency
2 Rate = (MAF/Population) * 100,000. Caution: rates calculated on MAF <20 are unstable and should be interpreted with caution.
3 Numbers less than 5 are suppressed to maintain confidentiality.

Table 7. Hospitalizations for Self-Inflicted Injury by Method and Sex, MA, 1996-1998				
	Males		Females	
Method[4]	MAF[5]	Percent[6]	MAF	Percent
Poisoning	1035	77.9	1847	86.4
Suffocation	24	1.8	12	0.6
Drowning/submersion	---	---	---	---
Firearm	14	1.0	---	---
Cut/Pierce	180	13.6	205	9.6
Falls	18	1.3	12	0.6
Other/unspecified	47	3.6	50	2.3
Late effects	10	0.8	7	0.3
TOTAL	1330	100	2136	100

4 See Appendix C for further description of methods.
5 MAF = Mean Annual Frequency
6 Percent of total column may not add up to 100 due to rounding.

Table 8. Estimated Emergency Department Visits for Self-Inflicted Injury by Age and Sex, MA, 1999						
	Males			Females		
Age	Freq.[1]	1997 Pop.	Rate[2]	Freq.	1997 Pop.	Rate
10--14	151	199263	75.7	307	189158	162.5
15--19	592	207139	285.6	951	203601	467.2
20--24	389	230140	168.9	592	233755	253.1
25--29	435	256137	169.8	563	255628	220.1
30--34	267	255510	104.4	586	256963	228.0
35--39	354	260595	135.8	487	265304	183.6
40--44	220	240396	91.7	394	249333	158.2
45--49	151	214255	70.4	267	225445	118.3
50--54	133	174461	76.5	255	184575	138.3
55--59	64	124059	51.4	99	134385	73.4
60--64	23	104206	22.3	29	116112	25.0
65--69	17	99675	17.5	17	120667	14.4
70--74	17	89113	19.5	---	120399	---
75--79	6	66029	8.8	6	103294	5.6
80--84	23	39273	59.1	---	75514	---
85+	---[3]	29558	---	12	84700	13.7
TOTAL	2842	2589809	109.7	4565	2818833	161.9

1 Actual frequency has been multiplied by a factor of 5.8 to calculate statewide estimates.
2 Rate = (Frequency/Population) * 100,000; 1997 population used. Caution: Rates calculated on Frequency <20 are unstable and therefore should be interpreted with caution.
3 Numbers less than 5 are suppressed to maintain confidentiality.

Table 9. Estimated Emergency Department Visits for Self-Inflicted Injury by Method, MA, 1999				
	Males		Females	
Method[4]	Freq.	Percent[5]	Freq.	Percent
Poisoning	1664	58.5	3294	72.2
Suffocation	93	3.3	17	0.4
Drowning/submersion	---[6]	---	6	0.1
Firearm	12	0.4	12	0.3
Cut/Pierce	667	23.5	963	21.1
Falls	23	0.8	23	0.5
Other/unspecified	383	13.5	244	5.3
Late effects	---	---	6	0.1
TOTAL	2842	100	4565	100

4 See Appendix C for further description of methods.
5 Percent column may not add up to 100 due to rounding.
6 Numbers less than 5 are suppressed to maintain confidentiality.

Table 10. Estimated Emergency Department Visits for Self-Inflicted Injury by Race, Age, and Sex, MA, 1999

	White, non-Hispanic				Black, non-Hispanic				Hispanic				Asian/Pacific Islander			
	Males		Females		Males		Females		Males		Females		Males		Females	
Age	Freq[1]	Rate[2]	Freq.	Rate	Freq.	Rate	Freq.	Rate	Freq.	Rate	Freq.	Rate	Freq.	Rate	Freq.	Rate
10--14	145	86.8	244	154.2	---	---	6	57.6	---	---	29	201.3	---	---	---	---
15--19	539	309.8	795	465.6	12	106.5	52	478.2	12	79.0	35	240.8	---	---	12	153.1
20--24	342	175.9	458	232.0	17	146.1	23	185.1	17	111.6	35	228.3	---	---	6	68.2
25--29	365	168.6	487	225.0	17	132.6	12	87.4	35	201.7	6	34.1	---	---	12	131.2
30--34	244	112.0	557	254.2	---	---	6	47.1	17	106.0	12	70.7	---	---	---	---
35--39	307	135.8	447	193.3	6	50.5	12	99.3	23	168.2	17	125.9	---	---	---	---
40--44	209	98.0	365	165.2	12	120.4	6	58.8	---	---	12	107.8	---	---	---	---
45--49	139	72.0	249	122.9	6	76.0	---	---	---	---	---	---	---	---	---	---
50--54	116	72.7	220	130.9	6	103.1	12	179.3	---	---	---	---	---	---	---	---
55--59	64	56.3	81	66.4	---	---	6	115.9	---	---	6	131.1	---	---	---	---
60--64	23	24.1	29	27.2	---	---	---	---	---	---	---	---	---	---	---	---
65--69	17	18.6	12	10.3	---	---	---	---	---	---	---	---	---	---	---	---
70--74	17	20.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---
75--79	6	9.2	6	5.9	---	---	---	---	---	---	---	---	---	---	---	---
80--84	17	46.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---
85+	---[3]	---	12	14.3	---	---	---	---	---	---	---	---	---	---	---	---
TOTAL	2552	112.0	3961	159.0	75	70.2	133	114.5	104	81.0	151	113.1	---	---	29	37.4

4 Actual frequency has been multiplied by a factor of 5.8 to calculate statewide estimates.
5 Rate = (Frequency/Population) * 100,000; 1997 population used. Caution: Rates calculated on Frequency <20 are unstable and therefore should be interpreted with caution.
6 Numbers less than 5 are suppressed to maintain confidentiality.